

SIR FREDERICK GRANT BANTING*

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BANTING will always be remembered primarily for the preëminent part he played in the discovery of insulin and I feel that you will wish me to speak particularly of that phase of his brilliant career.

Banting's ancestors were of Irish and Scotch extraction. I remember a very pleasant week end spent with him and his parents at their farm house shortly after the first stage of the insulin work was completed. His mother, whose maiden name was Grant, died only a year before her son. Both she and his father were of sterling worth. I have a letter from Banting written in answer to a note of condolence at the time of his mother's death. He wrote "The death of our parents places us in the front line."

After qualifying at the High School in Alliston, where he was born, Banting entered the University of Toronto. He was the type of student whom his instructors remembered. He had an inquisitive mind. His medical course was interrupted by the Great War but after enlisting as a private, he was sent back to obtain his degree. He completed his course in 1917 and immediately entered the Army. He took a very great interest in his military patients and many of them kept in touch with him throughout his life time. The high point of his military career was his experience in France, where he won the Military Cross for bravery in action.

After the war he specialized in surgery at the Sick Children's Hospital in Toronto, where he gained the friendship of such men as the late Professor C. L. Starr, Professor W. E. Gallie and Dr. D. E. Roberston. When Banting left the Sick Children's Hospital he began the practice of medicine in London, Ontario. The growth of his practice was disappointingly slow and Banting spent some time demonstrating in the Department of Physiology of the University of Western Ontario. While preparing a lecture on diabetes, he read an article by Dr. Moses Barron.

* Read October 2, 1941 at the Stated Meeting of The New York Academy of Medicine.

Banting always felt that Dr. Barron, whom I think he subsequently met, had helped him to form an hypothesis which was in part responsible for the initiation of the work which led to the isolation of insulin.

Banting went to Toronto in the autumn of 1920 to consult Professor J. J. R. Macleod who was recognized as one of the world's greatest authorities on carbohydrate metabolism. I was spending part of my time that year in physiological research under Macleod's direction but I did not meet Banting until the next spring just after I had completed my course in Physiological and Biochemical Sciences. Macleod told me about Banting's desire to search for the internal secretion of the pancreas and he spoke admiringly of Banting's determination. This quality was the outstanding one in his character and was immediately apparent when I met him in May, 1921, a few days before the investigations which resulted in the isolation of insulin were begun. The initiation of the work was due entirely to him and he overcame all of the many obstacles in his path.

It will perhaps serve as a further appreciation of his character if I outline a few of the incidents which seemed to us important at the time. When the first five weeks of work revealed the fact that our technique for securing pancreatic degeneration was unsatisfactory, Banting did not hesitate to finance himself for a further period by selling his small car. He sometimes performed minor operations for some of his medical colleagues. He loaned me a small sum which was only repaid when Professor Macleod in the autumn made arrangements for us each to receive the sum of \$60 monthly. My payments and, I think, Banting's were dated back for several months.

Banting was a skilful and resourceful surgeon. For the first few months all of the chemical work fell to my lot but he gradually learned the techniques and he taught me the surgical procedures essential to our work. There were, of course, many problems but our association during those busy months gave me a tremendous respect for his perseverance and peculiar ability to plan attacks and to carry through the investigation. We became very firm friends. His letters to me and the charts and illustrations for our first articles which we worked on together, are among my most prized possessions. I will always be indebted to him for his generous references to my part in the insulin investigations, for sharing equally with me his half of the Nobel Prize award and for his numerous demonstrations of thoughtfulness and regard. At the last com-

mittee meeting which we attended together, a few weeks before his death, an extension of my department was under consideration by members of our Board of Governors. Banting's unselfish and most helpful interest in this matter is recorded in the minutes of that meeting.

Our very intimate association in research, which began on May 16, 1922, persisted until October 1923, when I decided to proceed with my medical course. Shortly after that the Banting and Best Department of Medical Research was created and Banting was installed as Director. He worked very hard at numerous problems over the period of sixteen years until the present war was upon us. He devoted himself mainly to cancer research but found time to stimulate many young associates who attacked a great variety of problems. The work on silicosis was perhaps the most successful.

I firmly believe that his second great contribution was made in the eighteen months of war when he sacrificed all his personal interests and gave himself unsparingly to organizing our country for research in the various aspects of war medicine. He devoted himself primarily to the medical aspects of aviation and eventually, as you all know, gave his life while attempting to carry new information on these problems to England.

Banting was a man of exceptional physical courage, intense determination, and warm friendships. He achieved the distinction of becoming our most illustrious Canadian citizen. He will be commemorated in many ways but he would have asked nothing more than that every attempt be made to extend and apply the results of the work which he began.